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MEMORANDUM

ORIGINAL

To: Bonnie Lavelle, Chris Weis
From: Mary Goldade
Date: November 5, 1999
Project: Vasquez Boulevard & I-70 Site Phase III
RE: Field Oversight - Indoor Dust Sampling
cc: Project Files

At your request, ISSI Consulting Group, Inc. (ISSI) visited the Vasquez Boulevard & I-70 (VBI70) Superfund Site on November 5, 1999 to observe field activities being carried out by Morrison Knudsen Corporation (MK).

Field Audit Summary

Residential Interior Dust Sampling

ISSI reviewed the indoor dust sampling procedures performed by MK's Field Sampling Team (Tim L., Laura and Ryan). Sampling was observed at 3324 Franklin Street to determine if procedures outlined in the SOP # ISSI-VBI70-04 were followed. Specific observations pertaining to the sampling episode are summarized below. Any necessary corrective action requests are also provided.

The sampling team arrived at the residence and introduced themselves to the homeowner. Following introductions, the team donned plastic shoe covers and entered the home with sampling equipment and the appropriate documentation. The team briefly interviewed the homeowner to determine the rooms considered to be living spaces and to determine which of those rooms could be sampled. The team chose four rooms to sample: a) living room, b) bedroom #1 on the first floor, c) bedroom #2 on the first floor, and d) dining room. The team stated that they preferentially chose carpeted areas because more dust was typically collected on carpets than hard surfaces. The team also stated that they were able to obtain sufficient sample when collecting 2 templates in each of 4 living spaces.

ISSI noted that a second floor existed and asked the team to determine if any living spaces were present. A child's bedroom was located on the second floor. ISSI requested that two rooms be added to the composite sample: a) kitchen, and b) child's bedroom on the second floor.

The team identified two templates (sub-samples) per living space as described in the SOP. A 2' x 2' solid plastic template was used to mark sample locations. Masking tape was placed along two sides of the template to create a "L" shape. The team stated that masking tape was no longer used along all four sides because the dust collector would catch and bind the tape while vacuuming. Rather than preparing a map of the entire residence, the team prepared a map of each individual room where sub-samples were collected. The dimensions of the rooms were taken and recorded. The location of the sub-samples and the directional location of the room were also recorded, however, significant landmarks within the rooms were not recorded. This procedure is adequate with one exception. In cases where two similar rooms exist (e.g., bedroom) on the same side of the house. Directional location alone may not be adequate to uniquely identify the house. An additional method of identification is necessary.

One team member stated that a template was usually used to identify sample locations, although not always. An example of the case when a template was not used follows. For areas where a small rug is located in the entryways, the entire rug was vacuumed as an estimate of the template area. This is a deviation from the SOP.

The preparation and calibration steps (Section 3.3 of the SOP) were not performed during the audit.

The team collected dust samples as described in the SOP with one exception. Although the composite sample was collected in a 250 mL polyethylene catch bottle, this bottle was not used as the sample container as required in the SOP. Rather, the team relocated to the outside of the house and transferred the sample from the catch bottle to a zip-lock bag. This is a deviation from the SOP.

Following sample collection, the team removed the masking tape markers and returned to the VBI70 Field Office to perform decontamination. ISSI observed the wet decontamination procedures outlined in Section 3.7 of the SOP. The nozzle, cyclone, tubing and catch bottle were decontaminated. The team stated that the wet decontamination procedure was performed only when sufficient time between sampling appointments allowed for it. In cases where appointments were too closely scheduled, the team performed only the dry decontamination step. This is a deviation from the SOP.

The sampling team prepared the following documentation: Indoor Dust Data Sheet, field notes in the Field Logbook and chain-of-custody (COC) form. All information contained on the Indoor Dust Data Sheet and the COC form was properly entered. Information contained in the Field Logbook was adequate with one exception. The team reported that they have collected one equipment blank, however the Field Logbook did not document this information. All activities associated with dust sampling including documentation of field quality control sample (equipment blank, field blank and blind standard) collection must be noted in the Field Logbook.

Corrective Action Requested

The Field Supervisor should instruct the sampling team that the goal for indoor dust sampling is to identify as many living space locations as available. The team should not discontinue sample location identification simply because 8 templates (or 4 living spaces) have been identified. As a goal, the sample team should attempt to include sub-samples from the television room, all children's bedrooms and at least one eating area (e.g, dining room or kitchen), as authorized by the homeowner. Rather than collecting 2 templates from each living space and limiting the number of living spaces from which dust is collected, it may be appropriate to collect a single sub-sample from each of several (8-12) living spaces providing sufficient dust sample is obtained. If the Field Supervisor desires this change be made to the SOP, a written request should be provided to the USEPA WAM/RPM for approval.

The Field Supervisor should instruct the sampling team to provide an additional identifier to the diagrams to uniquely identify the diagram of each living space. For example, the team may include the name of the bedroom occupant or include nearby landmarks within the home that will uniquely identify the room. Landmark identifiers may include nearby rooms. It will be important to use the field diagrams to return to the residence and relocate sub-sample locations in the event that high contaminant concentrations are reported. This additional documentation will aid in that identification.

The Field Supervisor should instruct the sampling team to always use the template to identify and sample sub-sample locations. This is important for two reasons. First, the SOP must be followed unless changes are approved by the USEPA WAM/RPM. Second, if a template is not used, information about the dust loading is lost. Although there will be times when a template may be larger than an area rug, it is acceptable to vacuum at a carpet/hard surface juncture (providing the higher flow rate of 9.5 L/s is utilized). For the past cases where the sampling team did not use a template to collect dust, a comment should be included on the Indoor Dust Data Sheet indicating this.

The Field Supervisor should instruct the sampling team to perform the preparation steps (outlined in Section 3.3 of the SOP) at each residence. The team must clean the wheels and the nozzle lip of the sampler after bringing the equipment into the residence but just prior to sampling. This must be done to reduce the possibility of contamination during transport into the home. Additionally, the team must perform a leak-check on the sample train and ensure no leakage is detected. If a leak is detected, the team must correct the leak before sampling may proceed.

The Field Supervisor should instruct the sampling team to perform a calibration of the pressure gages at the beginning of each day that samples are collected. If the Field Supervisor recommends an alternative method for calibration, that recommendation should be forwarded in writing to the USEPA WAM/RPM immediately.

The Field Supervisor must obtain 250 mL polyethylene collection bottles to support the

remaining indoor dust sampling effort. Dust samples may not be transferred to a zip-lock bag. Not only does the sample transfer greatly increase the opportunity for induced contamination, but sample transfer potentially alters (i.e., reduces) the actual metal mass contained in the zip-lock bag. Information on both the metal concentration and the dust loading may be lost.

The Field Supervisor must instruct the sampling team that both dry and wet decontamination steps are required after each sampling episode. Indoor dust sampling appointments should be organized such that appropriate time is allotted for the sampling and both decontamination steps.

The Field Supervisor should remind the sampling team that information about all activities associated with dust sampling must be documented, including when equipment blanks, field blanks and blind standards are collected and inserted into the sample stream.

The Field Supervisor should remind the sampling team to collect blind indoor dust standards and incorporate them into the sample stream at regular intervals throughout the course of dust sampling. Blind indoor dust standards are collected by vacuuming up standards of known concentration. The standards will be placed onto a clean (lead and arsenic free surface) and collected in the same way as an investigative sample. If desired, ISSI can provide these blind standards. onto a clean (lead and arsenic free surface).